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## THE PSYCHO-PHYSIOLOGY OF THE MORAL IMPERATIVE.

BY JAMES H. LEUBA, PH. D.

Among the many experiences of the ethico-religious consciousness, there is one of such exalted mien and striking distinctness, announcing so loftily a mysterious will and playing such a remarkable rôle in the higher life of man, that it has long since been singled out by name among ethical races. Kant has baptized it: "*the Categorical Imperative.*" It would be difficult to overestimate either the practical or the theoretical rôle played by this ever-ready monitor. Theologians and naturalists alike have recognized in it the highest and most distinctive endowment of man; "I fully subscribe to the judgment of those writers who maintain that, of all the differences between man and the lower animals, the moral sense or conscience is by far the most important," says Darwin, in the chapter on the Moral Sense in the "*Descent of Man.*"

It is after this inward pattern that the ethico-religious seers and prophets have drawn the features of the objective universal Moral Order. In the past no attempt has been made to analyze the Moral Imperative<sup>1</sup>; it has been considered a simple, ultimate fact and it has moreover been supposed to be, somehow, of another order than the rest of the psychic life. Currently, it has stood for the "divine" in man. Kant himself accepted the fact uncritically as the inscrutable expression of 'universal reason,' as "the absolute dictator of its own laws," and bestowed upon it sundry distinguished appellations, such as "it is an *a priori* synthetic-practical proposition." He was not anxious to discover the *deus ex machina*, but rather, conformably with his general psychological dualism of sense and reason, to make out by repeated affirmations and by appeals to experience an independence of the Categorical Imperative "of any particular tendency proper to human reason, and which need not necessarily hold for the will of every rational being."<sup>2</sup> "From what has

<sup>1</sup> For a summary and discussion of the theories of the Nature and Origin of Conscience, see Chap VI and VII of Hyslop's "*Elements of Ethics.*"

<sup>2</sup> These quotations are taken from the "*Fundamental Principles of the Metaphysics of Morals,*" tr. by Theo. Kingsmill Abbott.

been said it is clear that all moral conceptions have their seat and origin completely *a priori* in the reason. . . .”

Although to-day the old-fashioned dualism of sense and reason has been set aside in the higher scientific circles, and although psycho-physiological science is now in condition to provide the necessary data for a detailed psycho-physiology of the Moral Imperative, the men of acknowledged authority have not directly addressed themselves to the consideration of this problem, and the superannuated Kantian metaphysical psychology of ethics has not yet been formally superseded by a psycho-physiology of the Moral Imperative in harmony with modern science. Unfortunately for ethics, it has remained chiefly in the hands of those who were not able to launch it in the new current; it still continues to waste its energy in the quest of the *summum bonum*, of the *criterion of conduct*. Whether this criterion be conceived of as a sort of Platonic archetype, the vision of which is to serve as a pattern of right living, or whether it is untranscendentalized and derived in Aristotelian fashion from a “thorough-going and exhaustive cross-examination of men’s actual moral judgments,” as if it was the centre of the complete circle formed by these judgments,<sup>1</sup> it is, in our opinion, an equally profitless chase with regard to practical ethics: profitless in the first instance because our cosmological concepts do not allow us to believe that there are such archetypes to be discovered; profitless in the second, though theoretically attainable, because it can not be the “ultimate standard” of our judgments about conduct, inasmuch as life is not best represented by a circle, but by a spiral or some such curve, expressive of the guiding modern belief in evolution, in growth. That opinions, such as the one quoted, should still be entertained and acted upon by some of our younger moralists, is a regrettable proof that the evolutionary view of life, if theoretically accepted, has not yet leavened our mental habits thoroughly enough to guide our thinking efficaciously.

Evolutionary ethics has, in its way, accounted for the genesis of the feeling of obligation. But as its method is not psycho-physiological, but rather historical, it cannot be expected to furnish us with the psycho-physiology of the Moral Imperative. When Spencer writes in the broad, undifferentiating manner, characteristic of first attempts in a new field: “We see that where the consciousness of authority, of coercion, and of public opinion, combined in different pro-

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<sup>1</sup>James Seth: “The Standpoint and Method of Ethics,” *Phil. Review*, Vol. VI, No. 3.

portions, result in an idea and a feeling of obligation, we must class these as ethical, irrespective of the kind of action to which they refer,"<sup>1</sup> we answer, yes, it is probably as you say, but, as psycho-physiologists, we should like to know more about that "consciousness of authority;" we should also like to understand better how the combination of certain consciousnesses brings about a feeling of obligation, and the well-deserved criticism by Prof. Dewey comes to our mind: "Their great defect is that they do not give us any method of differentiating moral coercion (or obligation) from the action of mere superior physical force." "The theories [of Bain and Spencer] must logically commit us to the doctrine that 'might makes right' in its boldest form."<sup>2</sup>

In the following essay we attempt to demonstrate the psychological parentage of the Moral Imperative and its physiological mechanism. We shall be led to set down the thesis that *the Moral Imperative is the psychic correlate of a reflective, cerebro-spinal, ideomotor process, the efferent end of which is organized into motor tracts coördinated for a specific action.* And we shall endeavor to show how the particular qualities of this experience are—on the generally accepted principles of psycho-physiology—satisfactorily accounted for by this physiological mechanism. In closing we shall direct the reader's attention to the most important practical deductions to be drawn from the advocated conception.

Most of the experiences of the mature man do not have as physiological counterpart the unit of biological activity, the reflex arc, but rather groups of associated processes of the reflex arc type combined in a system of antagonistic forces. The Moral Imperative belongs to such a class of complex experiences. The famous dilemma of Buridan's ass might serve as an illustration, if there were need of one for such a familiar occurrence. Whenever he turned his head towards the water and was about to move, the hay caught his mind's eye and made him look to the bunch, but before decisive steps had been taken, the water was present again. The tilting equilibrium was so perfect in this instance that it never broke.

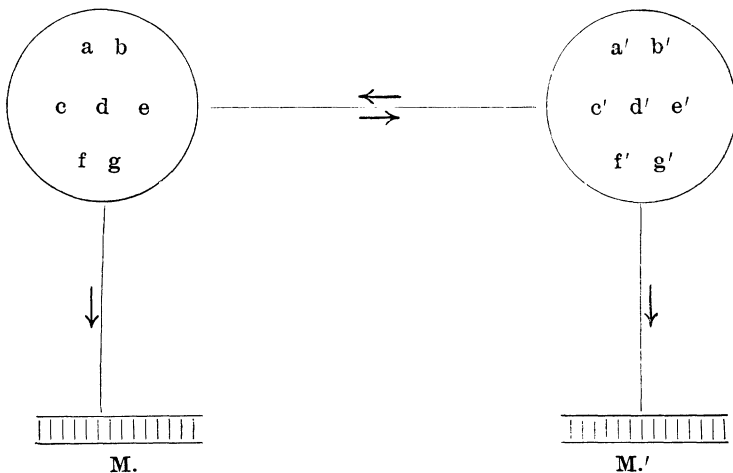
Moral obligation is never felt but as a member of such an antagonistic system. When an action is performed reflexly or when, being anticipated, it follows smoothly without any conscious inner obstruction or hesitation, without entering into conflict with another end, there is no room for a

<sup>1</sup> "Inductions of Ethics," p. 337.

<sup>2</sup> "Ethics," p. 144.

categorical imperative. If, for instance, I see a person in imminent danger of being run over by a street car and I exclaim suddenly, "Look out!" my behavior does not imply the knowledge of the Moral Imperative. Similarly, if I learn by the morning mail that my dear friend X has fallen grievously ill, and, in a wave of compassionate feeling, I say, "I shall take the first train to him and try to soothe his suffering," the categorical imperative has not been heard. But if, in the first illustration, be it from sheer inertia or from unwillingness to cry out in a public street, I wait a few seconds to see if the person becomes aware of the danger, and then, not automatically, but after a more or less clear knowledge of the unworthiness of my reticence, I direct his attention to the danger; or if, to make the case plainer still, the person happens to be my great enemy and the thought flashes through my mind, "Let him be killed!" while the second after better motives prompt me to interfere, then I may properly be said to have heard the "voice of conscience" in the form of the categorical command. The value of the result of my conduct measured in pleasure or utility is here irrelevant, since we are not discussing the worth of action, but a peculiar consciousness.

The antagonism of these dynamic systems is a *motor* antagonism known in consciousness as an antagonism of intentions, or of ends; *i. e.*, the reflex arc processes are combined in two groups and end respectively in muscles, coördinated for contrary actions; there is consequently a reciprocal defeat of purposes. Schematically the experience may be represented by the accompanying diagram, in which *a, b, c, d, e*, etc.,



stand for cortex processes discharging concurrently into the muscles  $M$ ; and  $a'$ ,  $b'$ ,  $c'$ ,  $d'$ ,  $e'$ , etc., stand for cortex processes discharging in the antagonistic muscles  $M'$ .

As immediately known, experiences of this kind may be compared to that of a man witnessing a kinetoscopic exhibition. On the projection screen he sees a developing tableau; let us say a man at the beach, walking along the spring-board, reaching the end, swinging two or three times and then plunging. Suddenly everything goes out; there is darkness for the space of a second. Then, again, a tableau is thrown on the canvas and is recognized as the continuation of the first; the man is now pulling himself out of the water, etc. The blanks between the tableaux correspond to the apparently empty breaks which we observe between the series of developing apprehensions of an antagonistic ideo-motor system. It feels like a break and a blank, because the apprehensions have a sort of *light* quality, due, no doubt, to their predominantly visual origin; when the cortex processes discharge into motor tracts and the chain of apprehensions is thereby interrupted, the inward panorama darkens and the change in the quality of the experience is naturally felt as a break and an extinguishment: a break, because of the sudden change in the kind of experience, and an extinguishment, because of the absence of representations of visual origin, since motor and visceral sensations now fill the mind. The break between the tableaux is more or less accentuated according as the motor discharge is more or less intense.

So much in the way of a rough psycho-physiological description of the antagonistic reflex arc combinations to which the Moral Imperative belongs.

It is evident that all the experiences of that class do not have the Moral Imperative *quale*; very far from it. Whether I shall, or shall not, go to see my friend may be a matter of simple convenience, there need not be any moral compulsoriness about it. So it is with the protracted dilemma in which Mrs. Smith gets when considering whether she had better put on her magenta or lavender gown. One essential element—the Moral Imperativeness, the sense of obligation—is lacking. Prof. Sidgwick says, in speaking of the subject of the present paper, that he calls such cognitions “dictates or imperatives because in so far as they relate to conduct on which one is deliberating, they are accompanied by a certain impulse to do the act recognized as right.” The too broad term “impulse” is not very felicitous in this place, inasmuch as the experience in question is a very specific kind of impulse. Kant aptly described it as a categorical imperative. In order to sepa-

rate that awe-striking experience from others, like it in some respects, we shall have to limit our antagonistic ideomotor cognitions to such as contain an "Imperative," and not an impulse only. But even this will not be sufficient, because there are cognitions which may well be called imperative and which, nevertheless, are clearly not moral. For instance, the insistent impulse of a sane, or insane, mind to get up at night and see for the second or third time whether the gas is turned out when *feeling quite sure*, as we say, that it is out.

But before endeavoring to differentiate on psycho-physiological grounds the non-moral from the moral-imperatives, it will be useful to single out certain traits of the cognitions having the imperative *quale*, whether it be moral or not.

The illustration just used will serve us well as a concrete case. Suppose, on the one hand, that having gone to bed it occurs to me that the gas in the hall is still burning and that I should go and put it out, but that immediately there comes the rejoinder, "No, it is not burning, I remember very clearly putting it out when I came back from town," the whole matter being thus given its quietus. Or let us imagine, on the other hand, that although I think I have turned it out, the motor-idea to get up for the purpose of extinguishing it recurs again and again, in spite of the momentary assurance I have that it is all right, until weary of the conflict I yield to the persistent "It is burning; go and put it out!" In the former instance, there is no imperative prompting to action, while in the second the impulse is described, in ordinary parlance, as "Imperative." It would be better to use the expression insistent or imperious motor-idea to characterize this class of experience, reserving the term imperative for the *moral* insistent ideas, for the reason that the urgency of the latter differs in a very specific manner from that of the former, as we shall see in the sequel. Nevertheless we shall conform here to a loose usage and avail ourselves of the adjective moral to differentiate the two kinds of insistent motor-ideas. The question before us now is, what is the differentia of an imperative experience?

Two points are in special evidence: the recurrence of the cognition and the definite apprehension of the action to which it prompts. A feeling of unrest and discomfort growing out of the conflict generally accompanies the experience as a derivative. It is worthy of remark that the imperative process need not be characterized by great motor intensity, although it always has a clear efferent conclusion. Oftentimes the calm, ineffective way—ineffective, because it does not have in itself the power to carry out its orders—in which it makes itself known, seems to be out of all proportion with the motor

energy with which it is resisted, and yet its teasing persistency may compel obedience. This point will assume a considerable importance when we come to consider the Moral Imperative.

The reader may have noticed that thus far we have had nothing to say regarding the will. As our problem is neither action, nor the relation of the ego to the Moral Imperative, but the psycho-physiology of the Moral Imperative itself, we shall not have to take the will into consideration at all. Whether we deal with a simple impulse, or with an insistent idea, or with a Moral Imperative, the will is excluded, for all these experiences are involuntary activities of which we find ourselves possessed and upon which we may react, but which we do not will into existence.

And now let us address ourselves in earnest to the consideration of the problem already mentioned and for which we have prepared the way in the preceding pages. In what do the consciousness and the physiological mechanism of the moral law differ from that of a "physical" or "external" compulsion, or from that of an imperious idea?

Ready common sense is not long held in suspense by such a query; it answers, "it is the object of duty, the things that are right, that we feel as morally binding, just as red things are seen red." Unfortunately for our peace of mind we do not believe that this *petitio principii* is the final word of science; we want to know what it is that makes a course of conduct to be felt as a duty, as morally binding. The feeling in itself is evidently an ultimate datum, but we may point out its qualitative relations to other feelings, and we may legitimately seek to do that which has already been done in the psycho-physics of the simpler sensations, of tone for instance, by Helmholtz, and even in the case of such complex experiences as the emotions,<sup>1</sup> i. e., we may seek for the specific mechanism which is the necessary counterpart of the "Stern Daughter of the Voice of God." To do this is properly the business of psycho-physiology.

Our end will be more safely reached through a critical examination and comparison of typical cases of moral and non-moral imperative experiences. We shall choose illustrations as similar as possible.

I. Being in bed, I am suddenly made aware of an impulse to go and put my watch, which against my habit I have left in my waistcoat pocket, in its accustomed place under my pillow. As soon as I have realized the meaning of the

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<sup>1</sup> See Darwin, Wm. James, Lange, Dumas, etc.



prompting, a counter impulse sets in, vaguely preceded by the apprehension of the comfort of the bed and discomfort of leaving it. For an instant I remain relatively quiescent; meanwhile, the apprehension "watch-in-my-pocket-not-under-pillow" develops; I see the usefulness or the uselessness of its being under my pillow and the danger of its remaining in my pocket, etc. Suddenly a break happens in the mental scenery and I say to myself, "The watch is safe where it is; I do not need it under my pillow; it is just as well where it is." But this has hardly crossed my mind before the first impulse is present again. For the second time, as soon as I have realized its meaning, I veto the getting-up tendency, judging that there is no need of my leaving my comfortable bed for such a purpose. But no amount of considering and reasoning prevents the impulse from recurring again and again, until exasperated I jump up and execute the order.

In this experience, we must notice three "movements" of the reflex arc type: (1) the impulse to get up following immediately, quite involuntarily, upon the apprehension of watch-in-my-pocket-not-under-pillow. Whenever that thought pops up, the impulse to get up follows mechanically as its efferent conclusion. The action is known through the impulse and not before it. (2) As soon as the meaning of the felt impulse is realized, an antagonistic movement occurs, the afferent part of which is more or less dimly known as an apprehension of discomfort, of cold, etc., that would be experienced were we to get up, and the efferent side of which is the innervation of muscles antagonistic to those stimulated in 1. This second reflex arc is, like the first, involuntary. (3) When impulse 1 has been neutralized by innervation 2, the necessity, usefulness, consequence, etc., of 1 and 2 cross my mind and, in a motor tendency antagonistic to getting up, I say, "I need not get up; it is a matter of indifference whether the watch is here or there." This third movement differs from processes 1 and 2 in that it is *reflective*, i. e., while in movements 1 and 2 the action was not known before the impulse to perform it, here the apprehension itself gets its cue from, or starts with, the cognition of the deed; the action is, as we say, *under consideration*. In the present instance, the motor conclusion of the third process is antagonistic to getting up, the imperative impulse is not approved of.

A group of three reflex arc processes—the first two involuntary, reflex, ending in antagonistic motor tendencies; the third one reflective, ending in the disapproval of the insistent impulse—linked together by associative connections and repeated an indefinite number of times, makes up the

experience we are now analyzing. To say that this triune process remains the same throughout its repetitions does not mean that the same apprehensions are repeated, but rather that the motor results are similar and that although the apprehensions may differ somewhat in vividness and in contents, they are, nevertheless, recognized as referring to the same objects and to the same action.

II. In the middle of the night I am awakened by the coughing of my brother lying sick in the next room. My first movement is to go to him and see whether I may do something for his comfort. Before this action is carried out an antagonistic impulse arises, following upon a more or less obscure apprehension of bed-comforts, etc. But this shrinking from getting out of bed has hardly subsided before a chain of considerations passes before my mind: the pain my brother might be enduring, which I might relieve; the meanness of my aversion to move, etc.,<sup>1</sup> a chain of apprehensions ending in a motor tendency in harmony with the first, and which I may express to myself in the words, "Yes, you *ought* to get up; it is your duty, it is right that you should do so." But somehow or other I remain inert until another fit, or the memory of the first fit, of coughing, or the thought of my brother, starts up again an abortive attempt to get up, etc.

Here, again, we have three coördinated arcs which may go on repeating themselves indefinitely. The first two are in every respect similar to the corresponding processes of the preceding instance. They are both involuntary, impulsive. The third movement, like the corresponding one of instance No. I, is reflective, but it differs from it in its direction; instead of opposing the motor conclusion of the insistent idea (the first reflex arc), it coincides with it.

III. Let us suppose that instead of being sick, my brother is in health, and that violent coughing from him still determined in me an impulse to go to him. The deterrent reflex arc process takes place as in illustration 2. Instead of imperatively urging me to attend upon my brother, the third process now leaves me free to do what I may choose; I express myself mentally in the words, "I need not get up;

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<sup>1</sup> Before going further we desire to draw the attention of the reader to the fact recently pointed out by Prof. Dewey in his article on "The Reflex Arc Concept," *Psychological Review*, Vol. III, No. 4. That which is usually taken as a reflex arc is generally a coördination, or combination, of a number of reflex arcs. The apprehension side of our reflective processes is in fact composed of a lot of afferent-efferent processes; but they are so combined that we may consider them as one resultant reflex arc movement.

there is no urgency ; he does not need me ; I may remain in bed if I like it best," etc.

IV. Fourthly, let us imagine, that, again in bed, I suddenly remember having neglected to write a letter recommending some one for a position. My first movement is to get up. Then comes an antagonistic innervation following upon the apprehension of the discomfort involved in getting out of bed to sit at the writing-desk, etc. Presently I become clearly aware that I have promised to write the letter, that the young man trusts in my word, and many unnamable, ominous shadows hover past my field of mental vision, and I say to myself, "Get up; you ought to." This experience is in every essential point similar to II.

The reader has no doubt noticed that the reflective motor-apprehension of II and IV was categorical, no alternate was left, "You ought to get up" was the conclusion ; while that of I and III is best described as disjunctive with regard to the action suggested by the first impulse : "There is no need of your placing that watch under your pillow," I said to myself ; and, if I had fully expressed my attitude at that instant, I should have added, "There is also no necessity for leaving that watch where it is, it is a matter of indifference," *i. e.*, the experience II (the sick brother), and IV (the promised letter), include the moral categorical imperative, the voice of duty ; while I (the watch), and III (the brother in health), are morally indifferent. All four experiences are similarly composed of groups of three coördinated processes of the reflex arc type ; two of them being reflex and the third reflective. If our analysis is right, it must be in the reflective process that we must look for the "moral" differentia, inasmuch as a reflex movement cannot be fraught with the feeling of moral oughtness. The words, "You ought or ought not to do this," and, "Do what you please about it," designate like every other word or group of words, by means of sensory signs, certain experiences, sensations, presentations, representations, apprehensions, feelings, emotions, etc., *i. e.*, certain irreducible, immediate consciousnesses. In the instances in question, these expressions are the names given to the motor conclusions of the reflective apprehensions. When those specific processes are felt in the described relations, we say either that we feel the oughtness, the duty ; or that we feel the action to be in itself indifferent. What the difference thus expressed is can be brought out only by a careful examination of the reflective motor-apprehensions themselves. As the process is of the reflex arc type, we shall consider it under two heads: the afferent and the efferent side.

As to its afferent side it is similar in the moral and in the non-moral movements; in both cases, it is a reflective as opposed to a reflex apprehension, *i. e.*, it takes its cue from the cognition of the action of which we have become aware through the reflex movements 1 and 2. Thus we know, as we say, that we are considering the advisability of a certain action, hence the name *reflective*. The efferent conclusions of these reflective arcs end in the muscles that would be needed to carry out, or resist, the execution of the action, or in their speech substitutes. We may call the reflex movements *blind impulses* because consciousness lights up only the way that has been already traveled; and bestow upon the reflective processes the name *intelligent impulses* because the lamp is turned forward and lights up the end at stake.

We have used the term *reflective* and not *voluntary*, for the evident reason that a voluntary activity does not only include the prevision of the possible motor conclusion, but also a something else, for which we have no better name than the ill-understood word "effort." The motor conclusive of the reflective process with which we are dealing comes not unannounced, but unasked for; be it desired, willed against, or unwilled, it imposes itself upon us just as much as the reflex process. This unwilled experience may very well be followed by a voluntary activity striving either for the suppression or the fulfilment of one or the other of the recurring movements, or yet by deliberate efforts to consider the question thoroughly from all sides; but this is not at all necessary to a reflective process of any kind, and especially not to a moral-imperative experience.

A second and far-reaching characteristic of the afferent side of the reflective arc, belonging also to both moral and non-moral experiences, is its independence of passions, emotions and sentiments; or to express this physiologically, its independence of the sympathetic nervous system. It appears to be an activity limited to the cerebro-spinal system. For the sake of convenience we shall anticipate a little, and, before having brought in all the evidence, shall make the statement that whenever the Moral Imperative is felt, it is the correlate of a purely cerebro-spinal reflective motor-process. Let the reader accept the statement on probation and keep it in mind through the rest of the paper; we trust that he will be finally convinced of its truth. We say that the third movements in our illustrations develop passively, dispassionately, coldly. Emotion and strong feeling may well develop after the motor-conclusion has been reached; it is this occurrence which often veils the fact we are trying to

bring out. Let the reader recall, for instance, the shame which will follow the realization of the command, "You ought to get up," when alongside of it creeps the consciousness, "You are too mean, or too lazy to obey," or when the command is looked upon as from God, and in consequence a mass of ethico-religious feelings is stirred. The exclusive cerebro-spinal dependence of the Moral Imperative has been also obscured because other experiences dependent in part upon the sympathetic nervous system have vaguely been identified with it under the general name of "moral-feeling." If, for instance, I recoil in shame and disgust from a lascivious piece of art, just as I push away a sour beverage, the turning away from and the being ashamed and disgusted do not imply the experience of the Moral Imperative, although a tendency to turning away might be its conclusion.

We pass now to the consideration of the efferent part of the reflective movement. Thus far we have found nothing differentiating the non-moral from the moral reflective process. In illustrations II and IV, the reflective motor conclusion was expressed by the words, "You ought to get up, there is no other alternative." In I and III, on the contrary, the motor side was not felt as a necessity of performing a particular act. I felt, "You need not get up unless you choose; do what you please." These expressions indicate, it seems, that, whereas concerning the first, the cortex activities corresponding to the reflective apprehensions pool their forces and discharge harmoniously in coördinated motor channels, concerning the second, the cortex stimulus either loses itself in many non-coördinated motor tracts or divides itself along two antagonistic lines of discharge, with the result that in the former case there is a clear, definite apprehension of the action, together with an impulse; while in the latter, the representation of the action is usually less vivid and there is no discernible tendency either to perform or resist it. The very definite aversion to getting up felt, for instance in illustration I, must not be mistaken for the motor side of the reflective arc process. A careful introspection will reveal that it is rather due to a repetition of the second reflex arc, occurring so quickly after the reflective arc that it may be thought to belong to it.

From the foregoing analyses, we conclude that experiences II and IV, *i. e.*, those including moral obligation, differ from the non-moral ones, I and III, in that the third, or reflective process, is imperative, which means in physiological terms that its efferent discharge is definitely organized along coördinated motor tracts. The "Moral" arc in these cases is: (1) reflective; (2) wholly cerebro-spinal; (3) it has a clean-

cut, coördinated motor conclusion prompting to an action. While the corresponding reflective arc of the non-moral experiences, if identical in regard to points 1 and 2, differs in the manner above stated with respect of its efferent termination.

The illustrations from which we draw the foregoing conclusions were expressly chosen in order to differentiate the Moral from the non-Moral Imperatives; we shall therefore have to extend the range of analysis before we may legitimately generalize our findings and affirm that these three characteristics belong exclusively, and always, to the Moral Imperative experience. Let us consider rapidly other typical experiences and see whether they do or do not fall in line with the preceding ones.

*a.* The thought of my friend X flits through my mind and I am prompted to go and see him. Then comes a string of apprehensions developing around "my friend:" some pleasant moment I spent with him not long ago, the attractive look of his study, his good cigars, his cordial greeting, and the warm pleasure he took in the conversation. Here a little wave of pleasurable feeling or emotion interrupts the chain of apprehensions and I feel an impulse to go; "I shall go and see him," I say. Presently another series of tableaux passes before my mind: he gave me three months ago an essay of his which I have not yet read; at our last meeting he inquired what I thought of it. He looked a bit ruffled that I had so long postponed the reading of it. I see him now betraying his displeasure at hearing that I have not yet found time to read the paper. Another wave moves me and I recoil, thinking, "I shall not go."

We may imagine the process coming to an end after the first or after the second ideo-motor movement; or yet continuing after the third along similar lines of associations, and ending now in a "going" and now in a "not-going" motor feeling. The first afferent-efferent process is automatic; the second and third are reflective, but neither one is free from the influence of the organs of the vegetative life; the chain of apprehensions is cut short by an influx of stimulus from the sympathetic nervous system. This experience does not contain the Moral Imperative.

Let now the circumstances be changed; suppose that X is of a humble station in life. He has called upon me long ago and I have not yet returned his call; he must feel slighted, etc. The motor conclusion comes and is expressed by the words I pronounce mentally, "That is wrong; you ought to go; it is your duty." It might be that the thought of having failed in civility from such a mean motive towards

a man I esteem shames me, and that I decide to go on the spur of this emotion. If such is the case, I do not feel under moral obligation; for acting simply because we should be ashamed to have people know that we had not acted, does not, according to general experience, fall within the field of the morally obligatory. But, and this must neither be overlooked nor misinterpreted, I may feel both the shame and the moral obligation. As a matter of fact shame often follows the feeling of oughtness, but it never precedes it as its *determinant*. Even when emotions or feelings precede or follow immediately the "voice of conscience," we are fully aware that it would be heard just as imperatively without them; this is due to the fact just stated that emotions form no part of the "moral" arc. In an experience like this, after the first realization of "oughtness" and of shame, these two psychic states generally recur both in representation and in presentation. In representation they "feel" at times as if they penetrated each other and made one more or less homogeneous state. This apparent fusion easily confuses the experimenter in the belief that "oughtness" and shame are here inseparable from each other.

In this last case, the process is reflective, free from feelings and emotions, and its efferent conclusion brings before the mind definitely and urgently an action. Just as in the previously considered cases, this ideomotor Moral Imperative does not stand alone, it is correlated with other ideomotor processes.

b. We hardly need dissect Moral Imperative experiences starting with the sting of the grosser passions, hunger, lust, etc. They would be found to be analogous to the preceding cases. We should find first a reflex impulse tending to the gratification of the passion; then, possibly, a chain of apprehensions including sentiments and emotions, such as fear of discovery, shame at our weakness, etc., ending in an assent to, or a dissent from, the deed. If moral obligation is felt at all, it would be found again to be the return feeling of the efferent conclusion of a reflective non-vasomotor arc.

c. I have been publicly criticised in a spirit of jealousy by some one, who, to reach his end, has not shrunk from false and calumnious representations. In my anger and indignation, I resolved to answer in a withering letter. I may feel violently impelled to write, without at all being conscious of moral obligation. If I cool down for a length of time sufficient to allow the undisturbed development of the cortex processes—and that is a very short time indeed,—it might be that the motor conclusion of the corresponding chain of apprehensions points nowhere, leaves me indifferent. If it be

so, I shall not know the Moral Imperative. But if it ends roundly in coördinated motor channels, filling my mind with the cognition of one specific action, then I shall feel moral obligation.

*d.* There are cases in which moral obligation is felt, but is not accompanied by the apprehension of a specific action. A general on the field of battle, for instance, may feel it morally imperative to make some move, although no particular movement seems best. Here the apprehension of the certain destruction which, under any conceivable possibilities, will overtake the army in its present position has a clear, powerful, motor conclusion tending to action again, but not to any highly specialized action. It is a discharge along the motor tracts coördinated for general bodily activity, turning about, running away, etc., or for the substitutes of these motions. Here again the spirit of the description we have given of the moral imperative process is not at fault; the motor discharge is not a random one, it does not reach as well the flexors as the extensors; it is coördinated for general action. The commander may subsequently consider a number of possible movements, find them all destructive and recoil from them all, until perplexed and confounded, he may grow cold and stupid,—but this has naught to do with the Moral Imperative.

*e.* The cases of so-called *external compulsion*, be it psychical or physical, do not differ from the preceding ones as far as the psycho-physiology of moral obligation is concerned. We need not consider the instances in which the habit of implicit obedience is so deeply ingrained that any order whatsoever is immediately executed or accepted without first awakening opposition or reflection. Such an automatic obedience as that of the old soldier at the Invalides who dropped his dinner which he was carrying in a tray on hearing a practical joker order "Shoulder arms!" evidently falls outside of our study. There is another sort of external compulsion affecting those who have learned the uselessness of resistance to certain commands coming from certain persons, or to certain despotic passions, or to the force of circumstances. Here the awareness of the compulsion does not always prevent the anticipation of the consequences of complying, and at times there is a recoil from them. When this recoil proceeds from a desire to avoid the pain or displeasure that obedience would occasion, the moral command is not heard. If we are aware of the Moral Imperative at any stage of an experience of this kind, whether we try to resist, or give up in despair without attempting resistance, we shall find on investigation that it is the conclusion of a reflective cerebrospinal motor process, exactly as in the preceding cases.



f. The "logical" activity through which we arrive at scientific knowledge presents many of the characteristics belonging to the Moral Imperative. It is a reflective activity independent of the sympathetic nervous system and its conclusion has a finality, a "categoricalness," akin to that of moral obligation. Galileo would have been glad to persuade himself that the earth is motionless, but the logical imperative protested and affirmed, "yet, it *does* revolve around the sun!" Despite these similarities, people find no difficulty in practically differentiating between these two classes of experiences. The conclusion of the Moral Imperative process urges to a specific action, affecting some being, while the other pronounces upon the existence, past, present, or future, of an object of thought. Physiologically this means that in the logical process the efferent side of the reflective arc does not discharge in muscles coördinated for an action *that would modify the experienter's relation to some existence*, although, to be sure, it has also a definite motor conclusion.

We have said of the reflective non-sympathetic process that it is impulsive, that it prompts to action. But its impulsiveness is peculiar; it differs from that of the reflex and of the sympathetic experience in that it does not seem to be due to the putting in incipient activity of the muscles involved in carrying out the action. Close introspection reveals, it seems to us, that the moral imperative process ends efferently, not in the muscles of the action itself, but in those of the speech organs which stand as their representatives. It happens thus that the urgency is not to perform the deed, but rather *to state that fact in speech signs*: we are not incipiently performing the deed, but, instead, we utter or hear mentally, "You ought to do this," or words to that effect. We shall postpone to another part of our paper a fuller discussion of this very interesting point. Let us add only that this impulsiveness is generally followed by an innervation of the represented muscles themselves and, on that account, we usually have, coming after and not belonging to the knowledge of the Moral Imperative, a genuine impulse to perform the action itself.

We may now go back to the provisory differentiation on page 539 and, on the strength of the agreement of cases *a*, *b*, *c*, *d*, *e* and *f*, with I, II, III and IV, we shall set down our thesis in the following general terms, referring the reader to the sequel for additional confirmation:—

*The Moral Imperative is the psychic correlate of a reflective, cerebro-spinal, ideo-motor process, the efferent part of which is organized into motor tracts coördinated for a specific action.* No Moral Imperative can be known in the absence of such a

physiological activity; and whenever an activity of this kind is known in consciousness, it is known as a Moral Imperative. This reflective arc stands in dynamic inter-relation with one or more arcs that are either non-reflective cerebro-spinal, or sympathetic reflective, or non-reflective sympathetic. These associated processes vary widely in number, vividness and compulsoriness; the only necessary thing is that there be at least one such process preceding the "Moral" arc and forming with it a dynamic system.

The four diagrams on the opposite page may help to give definiteness to our thesis.

*Explanation of Diagrams.* In every diagram the dotted line *C.* stands for the cortex layers of the brain, and the dotted line *Md.* for the midbrain and the medulla. *M.* stands for the voluntary muscle system, exclusive of the speech organs; *V.* for the organs of vegetative life generally; *a. b. c.* for those parts of the brain concerned in the apprehension of the action, and 1, 2, 3, 4, 5, 6, for the apprehensions developing from, or ending in that of the action; *vs. c.* for visceral sensation centres; *s. c., s'. c'.* for speech centres, and *s. o.* for speech organs.

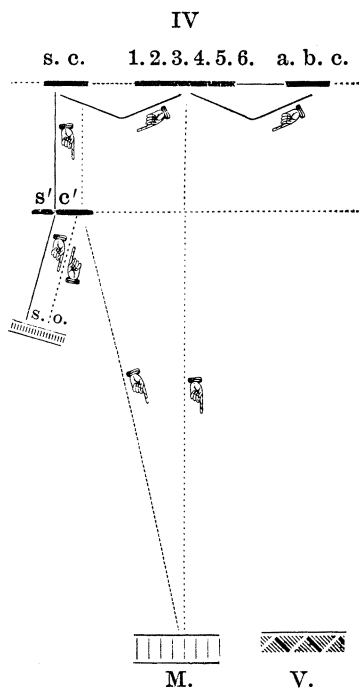
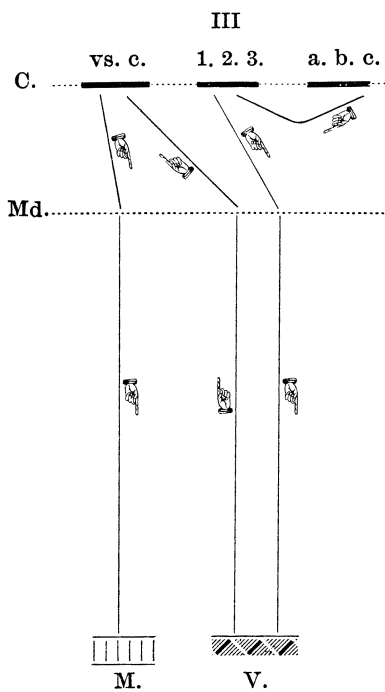
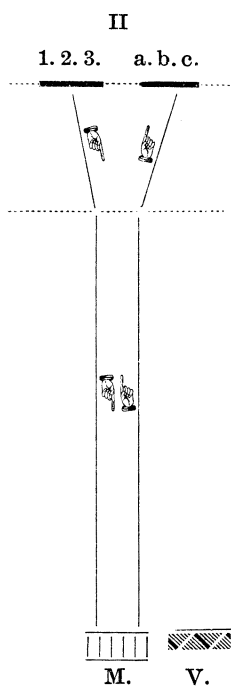
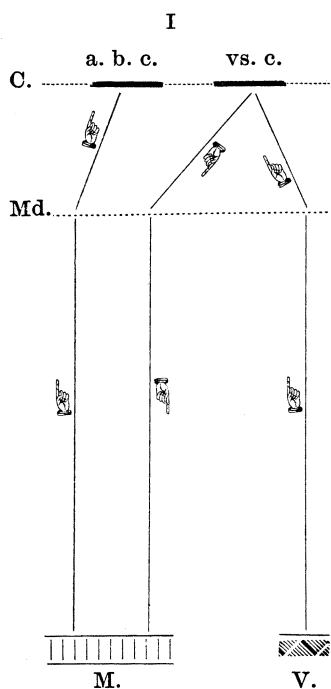
I. *A sympathetic reflex process*, starting in *V.* The action, to which the efferent discharge to *M.* prompts, is known only after the return motor sensations.

II. *A cerebro-spinal reflex process.* It may stand for the non-moral imperative processes we have instanced. It starts with 1, 2, 3, 4, the processes corresponding, for instance, to the apprehension of "watch-in-pocket-not-under-pillow," and ends with *a. b. c.*, which stand for knowledge of action towards which an impulse has just been felt.

III. *A sympathetic reflective process.* Sequence of events: (1) *a. b. c.*, (2) followed by a series of associated apprehensions. 1. 2. 3. (3) Discharge along visceral motor tracts, into viscera *V.* (4) Return visceral sensations in *V. S.* (5) Motor discharge in cerebro-spinal system reflexedly felt as impulse to act.

IV. *A reflective cerebro-spinal process.* Sequence of events: (1) *a. b. c.* (2) 1. 2. 3. 4. 5. 6. (3) Discharge into the so-called speech centres *S. C. and S'. C'.* (4) Sensory return.

*Remarks on Diagrams III and IV.* The class of experiences represented by schema No. III is the one with which we are most familiar; it is the "natural" experience *par excellence*; the only kind of experience possible until the sympathetic nervous system has been differentiated to a high degree from the cerebro-spinal system. We must take especial notice in this class of experiences of the influx of stim-



ulus due to visceral activity ; it precedes the cerebro-spinal motor discharge which brings about the action, or the impulse to act, and constitutes a weighty factor in its determination. The intellectual consequence of this nervous influx through the sympathetic system is to shorten the string of reflective apprehensions, *i. e.*, to cut short the development of what may roughly be called the "reasons" for acting. There are occasions when the experienter is gallingly aware of this arrest ; for instance, when, in spite of vigorous dislike, we strive to be impartial towards some one, and again and again discover that the affecto-emotional wave has led to a judgment before we had taken into account this good point and that estimable trait. It even happens that under the influence of disdain, anger, impatience, pride, self-conceit, etc., we reach a conclusion-motor-impulse, all the while (as it seems) knowing that we have suppressed certain evidence, and distantly protesting against this unfairness. The blinding effect of passion has long ago, and in many lands, been turned into popular sayings. How this must be, and within what limits, can easily be understood from the point of view of dynamic physiology. How this state of things affects our general estimate of the worth and dignity of the judgments reached through processes of this class, we shall see later on.

It hardly need be said that the class of experiences represented by schema No. IV can belong only to beings whose cerebro-spinal nervous system has been so far differentiated from the nervous system of the life of nutrition and reproduction that it has isolated, closed, afferent-efferent channels. This schema represents all the higher purely "intellectual" operations ; the calm deliberations of a man of science as well as the "voice of conscience." How the former differ from the latter we have attempted to say on p. 543, case *f*.

For the sake of brevity and simplicity we have spoken of 1, 2, 3, 4, 5, 6, as if they represented direct, successive associations of purely intellectual representations. We incline rather to the belief that every one of the links of the chain of apprehensions is made up of a "shortened" reflex-arc process,<sup>1</sup> and that it has frequently a well-marked affecto-emotional tone. But these reflex-arc processes get into dynamic unity and pool their efferent sides into coördinated channels, and so we may deal with them as if they made up one single reflex-arc.

Our use of the expression "purely intellectual" will probably have suggested an absolute independence of intel-

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<sup>1</sup> See the paper of Prof. J. Dewey, already mentioned.

lectual knowledge from pain, pleasure and emotions. The observations made with the help of the sphygmograph, plethysmograph, pneumograph, dynamometer, and otherwise, have placed beyond doubt that which the anatomy of the nervous system had already suggested as highly probable, *viz.*, that even the mental activities which feel most purely intellectual, exercise a measurable influence on blood circulation and, generally, on visceral activity. But we may, legitimately, it seems, make use of the expression "purely intellectual" to name those cognitions in which the experiencer does not recognize an affective tone, or an emotion. The faint and unfelt, or rather undistinguished, general bodily echo of the felt intellectual process does not concern us here. Moreover, as introspective observation declares that the Moral Imperative is the purer, the more exclusively intellectual it feels, we need not in a study of this phenomenon take into account an element that is to it as the dross to the metal.

Another explanatory remark we must make concerning the efferent conclusion of this IV type of process. It is marked on the schema as ending in the speech organs, and not in *M.* as in the others. We have elsewhere had occasion to bring out a rather subtle difference in the "feel" of the Moral compared with the non-moral imperative process. We found that the being aware of the moral imperativeness of an action is not, strange as it may seem to the superficial observer, synonymous with the consciousness of a motor impulse to perform it; that, unfortunately for many of us, the knowledge of duty is not necessarily accompanied with an impulse to act. We are frequently, to use the words of the theologians of the 17th century, famous through the Letters of Pascal, in possession of the *grâce suffisante*, but we have not the *grâce efficace*. It lays down an absolute law, but it does not carry it into execution; it is a purely legislative and not an executive power. Hence it is that its imperativeness does not infringe upon our "freedom." This is to be physiologically interpreted, we believe, as meaning that whereas in the non-moral imperative processes the efferent discharge reaches the muscles that would carry out the deed itself, in the case of a Moral Imperative it is vicariously directed to the speech centres and thence to the speech organs, which act as substitutes, and therefore we have an impulse to *speak*, but not to do the deed. This substitution will appear more plausible, and its *modus operandi* more intelligible, if we glance at the psycho-physiological history of "consent," or "approbation."

Originally consenting to something is *doing* the thing consented to. The amœba either encloses and absorbs the parti-

cle that touches its body, or does not; the newborn infant sucks, or does not suck. But very soon substitute motions are developed, and take the place of the action itself: the turning away of the head gradually takes the place of the tight shutting of the mouth. Later, when speech makes its appearance, a sub-substitution occurs; the child instead of closing its mouth, or turning away its head, speaks the vicarious "no," and, henceforth, for the deed itself is substituted a representing deed of the speech centres and organs. To follow, with much detail, the reflex-arc mechanisms through their exceedingly complex schemes of substitutions would be a long and difficult task; what precedes may, perhaps, be adequate to our purpose. It will, at least, suffice for a correct understanding of the last clause of our definition of the Moral Imperative process.

Many will find it hard to admit that the less the Moral Imperative experience contains an impulse towards the execution of the command, the clearer it is. This difficulty is caused, we believe, by the fact that the substituted activity in *s. c.*, *s'. c'*. and *s. o.*, is probably always followed, according to the laws of association, by a motor discharge, more or less vigorous, into the represented muscles; this impulse is wrongly taken to be an intrinsic part, or a condition, of the consciousness of the Moral Imperative, although it is only an appendage.

The dotted line going from 1, 2, 3, 4, 5, 6 to *M.*, in Diagram IV, represents the possibly generally present survival of the primitive motor discharge going directly from the sensory realms to the deed-muscles themselves. We need not expect that the primitive sensory-motor course is absolutely obliterated in moral-imperative processes; they need not be pure.

We have all along proceeded on the assumption that the cognition of moral oughtness is the psychic side of certain particular processes of the reflex-arc type. We have said that the words "you ought to get up" or "do what you please, it is indifferent," are the names of the consciousness of such physiological activities. We shall probably be called to account by some for setting aside so unceremoniously the theory that used to reign supreme among ethical philosophers, and which is still in high honor in many quarters, not so much because of the satisfaction it gives as because no other theory, more in harmony with the conceptions of modern psychology, has been clearly set forth. The knowledge of duty, of oughtness, they will say, precedes and is the determining cause of the bodily activities which you put forward as the condition of the cognition of the Imperative.

This theory is an old acquaintance ; it is the child of the now obsolete conception of the soul as an entity knowing, somehow, independently of bodily activity. Little by little it has had to give up some portion of the field of experience ; at first the lower cognitions, those of the senses ; more recently, the emotions were taken out of its realm by the Lange-James theory. In looking upon the moral feelings, as conditioned by specific physiological processes, we do no more than place this class of phenomena under the conception now generally accepted touching the relation of mind and body. We do not say that these bodily activities *cause* the "oughtness," neither do we say the reverse ; we are content to state a parallelism and to affirm that, without these physiological phenomena, there is no possible knowledge of the Moral Imperative, just as—and for similar reasons — there can be no sight without the healthy activity of the optic nerve and of certain definite parts of the brain. Arguing on this point would be to enter upon a discussion of the most fundamental conception of modern psychology. To do this would be an impertinence unless we could show, or had sufficient reason to believe, that the facts of the moral life cannot, with reference to this conception, be classed together with the lower sensations, with the emotions and with the æsthetic feelings. But, of this, not only is there no evidence, but, moreover, all the facts known make it absolutely impossible to sever the moral from the rest of the psychic life.<sup>1</sup>

In so far as we call actions *right* or *wrong* according as they do, or do not, agree with the leadings of the Moral Imperative, and as we use the word *duty* to designate the actions morally binding upon us, in so far do these names *right*, *wrong*, *duty*, derive their meaning from the consciousness of the Moral Imperative, and are they applied solely under its guidance. We say "in so far" because we are not now prepared to affirm that right and wrong, in their moral meaning, as understood in civilized countries, never have another origin than the experience of the Moral Imperative.

The proposition that the knowledge of "oughtness" or of "duty" is the result of the described reflective arc is appar-

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<sup>1</sup> For the rest let it be said that the parallelism doctrine is to our mind thoroughly unsatisfactory: it supposes a chasm between events we feel the need of relating in a sequence. The postulation of a causal relation between the two classes of events, in either direction, will remain unintelligible as long as our understanding of the nature of these two series of facts does not change. Let us hope that psycho-physiology will soon stand on a surer foundation.

ently controverted by innumerable experiences. The popular mind will be quick to point out the undeniable fact that we frequently know things to be objects of duty before having at all considered their consequences, purport, etc. (1, 2, 3, 4, 5, 6, in Diagram IV). If I think of stealing, I immediately know that it is my duty not to steal; and to say that this cognition follows upon a long series of apprehensions as before described, is most clearly a misrepresentation of the sequence of events. I know first that it is duty, and if I have the thoughts in question at all, it is only subsequently.

Psychology finds the answer to this criticism easy. Sensations are *signs* of objects, said Helmholtz. A sensation may stand for other sensations, and a feeling for other feelings. The wealth and complexity of our psychic life are largely due to the possibility of our knowing, on experiencing a sensation, or a feeling—if we may speak thus—that its object would under different circumstances give us other sensations and other feelings. Because of such substitutions we are enabled, on the perception of one quality, to apply to its object adjectives which were given to it to describe some other qualities. For instance, if on seeing an apple I know it to have an acid taste, a certain color has given me the knowledge of a taste. Similarly, because of the name of a famous painter on a canvas, or because a connoisseur declares it a work of high artistic merit, I “know” it is a beautiful painting, I believe it, I say so to my friends. I have neither tasted the acidity of the fruit, nor felt the beauty-thrill of the painting, and yet I know the one to be acid, and the other to be beautiful. It is evident that although I know, now, acidity and beauty without really experiencing them, it is only because some time ago, in my early experiences, I have tasted “acidity” and seen “beauty,” and associated these complex verbal signs with other sensations, feelings or perceptions, due to the same object. Thanks to this association I am enabled, in subsequent experiences, to conclude immediately from the color to the taste name, without going through the long process of biting the apple and the physiological activity that follows. It is a similar vicarious substitution that makes it possible for me to-day, on the recognition of certain non-moral traits, to know that an action belongs to the class “*Moral Imperative*.”

We must not overlook the fact that not only do certain simpler, more convenient experiences substitute themselves for others in the same individual, but that, moreover, in the case of gregarious individuals, the experience of one of them often introduces among the others the name of that experience and certain forms of activities which were, in the orig-



inal experiencer, the reaction to it, although they may never have had the experience they name and under the influence of which they now act. Among the many who speak of the "awfulness of sin" and who live in fear of it, a comparatively small number have really experienced the "awfulness of sin." Shall we instance belief, faith, or the many virtues which we practice as the result of imitation? In its lowest, as in its highest regions, this vicarious world of ours is indebted to a few geniuses, blessed with exquisite sensitiveness and intelligence, and favored by circumstances, for the possession of substitutes—in the form of names or other sensations and feelings—for certain experiences that have never been their own, and for the habit of properly reacting to them. This is practically all that is necessary for the conservation of the individual and the progress of the race. These geniuses have bequeathed to the common herd their æsthetic and moral judgments and habits.

Frequently in the course of education, after having first learned the substitute and the reaction it calls for, we become acquainted with the substituted. This practically invaluable substitution, by which the original sequence of events is changed and links are dropped, is the great mystifier of those who attempt to unravel the mysteries of psychic life. As long as the representing is still able to call up the represented, the difficulty thrown in the way of the investigator is comparatively small; but when through long existence of the shortened connection and long disuse of the represented, the links are lost, then Nature, which seems to take pleasure in making safe her secrets, triumphs, and man struggles long in vain with problems many of the original features of which have completely faded out.

Let us now, changing our line of argumentation, search more closely for the psychic characteristics of the Moral Imperative as we find it in ourselves and as it has been described by those who have dealt with it in writing, and then ask ourselves what sort of physiological process might condition that experience. We shall thus discover the possible justifications of the current erroneous theories of Moral obligation, and show that, were we conscious of a reflective motor process of the kind described on page 543, it would necessarily be—according to our present knowledge of psycho-physiology—through the very qualities that we shall put down as characteristic of the Moral Imperative.

The poets speak of the Moral Imperative as the "Stern Daughter of the Voice of God" (Wordsworth). The ethical and religious philosophers define conscience 'the voice of a

conscious being external to me, to all men, who has made us and all the world' (Martineau); and the guiding genius of the metaphysical philosophy of this century cautions us against "allowing ourselves to think of deducing the reality of this principle from the particular attributes of human nature" (Kant). The Moral-Imperative, according to him, is to be clearly differentiated from "propensities," "inclinations," and everything else belonging to the individual. It transcends experience, it is a law, universal, categorical and imperative.

They all, poets and philosophers, struggle to express in the loftiest and the most uncompromising terms the universality, impersonality, finality, obligatoriness and imperative-ness of this experience. After its imperativeness, it is its objectiveness, its independence of throbbing flesh which has attracted the special attention of the moralists. They have found a wealth of expression to picture that quality of the low but stern voice heard in the quiescence of the soul, in the stillness of the night; always there when we listen for it, but never heard in the din of passion. When the fever of jealousy, anger, or lust, surges on, or when vanity, distress or anguish thrills our souls, we feel the imperiousness of non-moral imperatives—of desires and cravings; but it is only when the wave has passed, when calm is reestablished, be it only for a second, that we hear the proclamation of the moral law in that peculiar, impersonal, unemotional, toneless but autocratic voice that is taken for the voice of God.

Another quality of the Moral Imperative is best felt when it stands in antagonistic combination with processes containing elements from the sympathetic nervous system. It seems, then, to occupy the equilibrated, the stable, the rest position. To pass from it to the other processes feels like being jerked away from the resting attitude; and to come back to it seems like returning from an unstable to a stable position. To this peculiarity, we must add the fact that we tend to return to this calm, passionless state. It is, among the ideo-motor processes, as the tonic note of a melody; we are really satisfied only when it is the last "feel" of the complex experience. It would be more exact to say that when we return to equilibrium and stability—as we necessarily must—then is the time when the Moral Imperative looms up.

Finally, let us add to these traits the peculiar inefficacy which we have mentioned and accounted for as best we could, and we shall have a sufficiently complete description of the categorical imperative: *impersonality, universality,*

*imperativeness, obligatoriness, passionlessness, finality, stability, inefficacy*, are its essential characteristics.

Does the particular physiological process we have described as the condition of the Moral Imperative account satisfactorily for these qualities, on the basis of analogy and of accepted psycho-physiological theories?

Concerning the stability and the fact that the Moral Imperative recurs together with the consciousness of rest and equilibrium, it has no doubt occurred to the reader that it is a consequence of the absence of stimulus from the sympathetic nervous system. We can feel at rest, stable, only in the absence of emotions and feelings, because the affecto-emotional states in general are, in their very nature, movements. Cerebro-spinal processes, it is true, are in some respects just as much transient as affecto-emotional states, but their coming and going seems to be as in an horizontal plane, while the movements of affective cognitions are as in a vertical plane, *i. e.*, while in the latter case there are necessarily gradual changes in bodily tensions, in the former such tensions are either not present or unessential. It is not easy to find adequate words to describe such a quality as this; but every one able to turn his vision inward will readily apprehend our meaning and understand how this sense of stability helps to give to the moral cognition a finality-value which other experiences cannot have.

The so-called "universality" of the Moral Imperative is due to its impersonality and to the supposition that the dictates of the moral law are, or should be, universally valid. Concerning the latter we have nothing to say; to-day, the relativity of the moral conscience and its freaks, need no expositor. With regard to the former—its impersonality—we have to ask how comes this experience to be separated, in common judgment, from the individual self, and to be looked upon as transcending it? What, in its nature, made it possible for Kant to lift it up above those cognitions that *belong* to the *individual*? On the ground of its universality, he might as well have classed the liking for salt together with it as impersonal and universal. To this query we would give the same answer as to the preceding one: the absence of sensations from the external senses, and especially the absence of sensations from the internal organs is, together with its involuntaryness and its relative universality, the justification of the expression "impersonal" when applied to the moral imperative or to "reason." It is evident that the independence of this cognition of the will would not, of itself, be sufficient to warrant its classification as "impersonal;" otherwise simple sensations would be just as much impersonal.

The difficulty vanishes when we realize that the great test of that part of our experiences usually called the "self" is, in non-voluntary experiences, pungency and localizability. Of two non-voluntary experiences, the one having the greatest sensational and emotional vividness and the most definite bodily localization is the one that we feel to be most our "own." The lessons of multiple personalities and anæsthesia are full of instruction on this point. Those which above all else seem most certainly ours in this narrow sense, are the sensations of touch, those of motion and those arising from the activity of the organs of the vegetative life. The latter form the great massive substance of the cœnesthetic self in which our supra-sensory cognitions, *i. e.*, our thoughts and judgments, are imbedded. It constitutes the incarnated self; everything is all right when our higher experiences are permeated by it, but let this background fall out and the self becomes a shadowy remembrance. Now, according to our theory, the Moral Imperative is conditioned by a reflective purely cerebro-spinal process, *i. e.*, it contains neither direct sensations from the external, nor sensations from the internal organs. Consequently it must feel as a disincarnated experience, as a disembodied unlocalized manifestation of spiritual life.

As regards the imperativeness of the phenomenon before us, we need not add much to what has already been said to make the assigned physiological counterpart satisfactory in this respect also. When an afferent process discharges through well defined motor paths, towards muscles coördinated for a specific action, we feel impelled to perform that action; if the process, for any reason whatsoever, recurs frequently, we have an insistent impulse which may well be called a non-moral imperative; and if such an imperative is the motor conclusion of a reflective process, free from sensations from the vegetative life, we have a moral imperative. It is moral because it follows upon a non-arrested, completed, reflective process, and is, on that account, accepted as final, approved as binding upon the subject. We are thus not only commanded to do a particular thing, but we also approve of it, and accept it; hence, its obligatoriness, its categoricalness. In the analysis of some of our illustrations we found reflex non-sympathetic processes that were imperious, but not morally imperative. In those cases the imperative was negated by the reflective process which came after, *i. e.*, in final resort, we did not approve the reflex imperative. *The motor conclusions of a reflective, non-sympathetic imperative ideo-motor experience are always approved of as final:* in the nature of the case, it cannot be otherwise, as we shall see presently.

"It is unqualifiedly true," says Prof. James, in his "Principles of Psychology," Vol. II, p. 568, "that if any thought does fill the mind exclusively, such filling is consent. . . . But it is not true that the thought need fill the mind exclusively for consent to be there." We cannot here attempt a discussion of this very difficult question of consent, but one thing we must try and make clear since our subject requires it. There are many kinds of "consent" of the filling-presence type. While I have in mind the first process of illustration No. I (the "watch" imperative idea), I may be said to consent to it, but the consent belonging to the reflective process of the same experience does not belong to the same family of consents. The former is an automatic, but the latter is a reflective approval, *i. e.*, an approval from a higher "self." A subdivision must, moreover, be made in the reflective consents according as the process having the consent *quale* does or not include elements from the vaso-motor system. We have, therefore, three different species of approvals representing not all the meanings the word assumes, but the most important ones. Each one has its particular grade of value: the reflex consent stands at the foot of the scale of values; we think better of the reflective-sympathetic consent, and for the reflective cerebro-spinal kind of consent we have a superlative regard; we may not know why it is so, but that it is so is the experience of everyone.<sup>1</sup> It is a sort of Supreme Court; its judgments are final and unrevisable, except by itself. Experience has taught us that the consents of the first class are liable to be withdrawn by the higher, reflective processes, and also that no judgment is final until it has been pronounced by the reflective cerebro-spinal court. These judgments of worth have the same origin as those which place sensations at the bottom and the higher mental processes on top; the same as those also which make us attribute greater worth to intelligence than to brute physical force.

Because this supreme approbation *quale* belongs only to experiences dignified by a sense of impersonality, it was granted the similar honor of being looked upon as a supra-personal, a divine approbation. *The imperativeness of the moral law is distinguished from the non-moral imperativeness by this highest kind of approbation accompanying its commands.*

Nothing need be added to what has already been said in explanation of the inefficacy of the Moral Imperative.

And now, when we put all these peculiar qualities to-

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<sup>1</sup> For some explanatory hints we refer the reader to pp. 544 and 546.

gether, when we reflect that the Moral Imperative lacks the "feel" of the incarnated self, that its dictates are well nigh universal in the same society ; that it comes and goes independently of our will ; that its imperativeness is stamped with supreme, with categorical, approval, and yet does not coerce ; that it utters its sentences in the quiet of relative passivity and is felt in antagonism to the fiery imperatives of the incarnated self, as well as in opposition to the blind promptings of reflex actions,—we wonder no more at the place assigned to it in the psychological schemes of philosophers who lived before, or who are ignorant of, the portentous reconstruction of the personality-concept at the hands of modern psychology and of the increased knowledge regarding the relation of mind and body.<sup>1</sup> They could not see the close bond of parentage existing between the Moral Imperative and the imperiousness of the vegetative life ; still less could they understand the physiological mechanism underlying the various moral experiences and how it differs from that of non-moral cognitions. In the circumstances in which they were, the theories and concepts they evolved were the only ones apparently able to justify the psychic characteristics we have just reviewed.

The Moral Imperative, when looked upon as the psychic expression of a well-defined species of reflex-arc process, takes its natural and legitimate place in the unified psychic system of modern science. Thus viewed, it becomes the correlate of the latest and highest biological differentiation, since it requires, as a condition of its existence, the independence of the cerebro-spinal from the sympathetic nervous system.

This functional separation of the life of relation from the vegetative life marks the most basal and most important differentiation in the course of achievement in biological evolution. One need not be an anatomist or a physiologist to know that in the continuous "effort" of the organism to adjust itself to its environment, the life of relation has tended to become more and more independent of that of nutrition and reproduction. In the lower forms of animate beings,

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<sup>1</sup> How quaint and obsolete seems the Kantian phraseology when looked at from the modern point of view. See, for instance, the characteristic passage ending with: "Here, then, we see philosophy brought to a critical position, since it has to be firmly fixed, notwithstanding that it has nothing to support it either in heaven or earth. Here it must show its purity as absolute dictator of its own laws, not the herald of those which are whispered to it by an implanted sense or who knows what tutelary nature."—"Fundamental Principles of the Metaphysics of Morals," tr. by Tho. Kingsmill Abbott, M. A., pp. 61 and 62.

where there is no specialized nervous system, the whole body responds to each and every stimulus. In some of the mollusks we find already two distinct nervous systems, considerably specialized, but still with large masses of nervous substance in common, in which stimuli of various origin unite and diffuse, so that such organisms cannot have experiences belonging exclusively to the life of relation.<sup>1</sup> In the grown man, the two systems, although inter-related, are largely independent; the visceral stimuli are largely confined to fixed channels, and there are numberless ideomotor cerebro-spinal tracts, practically closed—so far, at least, as consciousness is concerned,—along which stimuli can travel without diffusing to a consciously appreciable extent in the sympathetic nervous system. In consequence of this high differentiation of functions, the various distinct types of processes Nos. II and IV are possible.

Individuals of different races, and those of the same race, differ widely with regard to emotionality and sentimentality. The recent neurological discoveries which show that the medullation of nervous fibres is far from complete at birth, but continues probably until late into middle life,<sup>2</sup> makes it easy to account on this ground for the general "emotional" difference existing between childhood and maturity. We may expect that a still more minute knowledge of neurology will bring to light the differences between races and sexes and individuals generally in the extent and completeness of the separation of the columns of fibres continuing the sympathetic system in the medulla and thence to the cortex of the cerebrum and cerebellum. Without stepping beyond legitimate deductions, we may well say that a history of the differentiation and isolation of the two nervous systems in man would give us, from the anatomo-physiological side, a parallel of the history of the antecedents, genesis and growth, of the moral sense, for reasons similar to those that show the anatomo-physiological history of the sense-organs to have moved step by step with the history of the "development" of the sensations.

Before closing we shall ask the readers' indulgence for a glittering generality, well worth considering, however. If the "endeavor" of the organism through its career of evolution is shown by comparative anatomy to have been towards the isolation of the sympathetic from the cerebro-spinal system, the greatest and most portentous *conscious* effort of the highest races during past millenniums has been to deliver the

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<sup>1</sup> See plates in Gustav Retzius' "Biologische Untersuchungen."

<sup>2</sup> See especially Flechsig's work.

"soul" from the influences of the "body." Who has not been deeply impressed by the fury, or at least the penetrating intensity, with which the prophets of the ethico-religious consciousness of the Indo-European races have preached the subjugation, if not the annihilation of the body, abdication of self, renunciation; *i. e.*, indifference to humiliations, to the wounds of vanity and the cravings and pains of the flesh, that we may walk in the pure light of the uncarnated spirit? Hindoo, stoic and Christian sages have done battle under the same banner. It would be easy, but it is unnecessary, to quote in support of this statement the sayings of Gautama, of his disciples, those of Jesus or his immediate disciples, and especially of the saints of the middle ages. Translated into modern language this baleful "flesh" or "body" stands for the experiences dependent upon the sympathetic nervous system; it is the manifestations of that part of the self roughly denominated "the vegetative life," while the "soul" designates in the philosophy of the Church, as far as it stands for conscious realities, the experiences dependent upon the cerebro-spinal nervous system: it is the life of relation. And so it appears that the crusade of the ethico-religious consciousness, is a war of the cerebro-spinal Self against the cerebro-sympathetic Self: a war recorded not only in the literary annals of humanity, but also, and in a more lasting manner, in the neuro-physiological mechanism of the survivors of the Struggle for Life.

The common man is struck with a momentary joyful amazement when it dawns upon him that the deliverance after which humanity has been and is still yearning, is the self-same deliverance towards which these ill-treated bodies of ours have tended, and which they have already achieved in a large measure.

The biological conception of the Moral Imperative developed in these pages appears to us as one of the stones of the psycho-physiological foundation yet to come, upon which a truly scientific system of applied Ethics is to be built in the place of the practically useless "criteria of conduct" given us by ethical philosophers as the chief conclusion of their painstaking labors. When scientific answers have been given to the following queries: How are these Moral Imperative processes established? How is the passage made from the inefficacious command to the action?—a question involving the treatment of the will, in as far as it is a factor in the determination of action; and of algedonics, if it is to be considered in this connection. What is the value of Moral Imperatives, measured in their consequences with reference to pain and pleasure, or to character, or something else?—a



question upon which much light will be thrown by the investigation of the formation of the afferent side of the reflective arcs. When these and other questions have received a psycho-physiological answer, applied ethics will be in position to give the scientific instruction that humanity may rationally expect from it, but which it has thus far received only as the result of desultory empirical knowledge; *viz.*, methods of establishing clear moral imperative processes, of value, and of developing efficient motor connections between the knowledge of the dictates and their execution.

If the analysis of the Moral Imperative which has been made in this paper is correct, it obviously justifies a most far-reaching change of current conceptions with regard to the origin and nature of moral evil, of sin—and consequently of Regeneration—and of the relation of morality to belief in God and to many of the dogmas of theology.